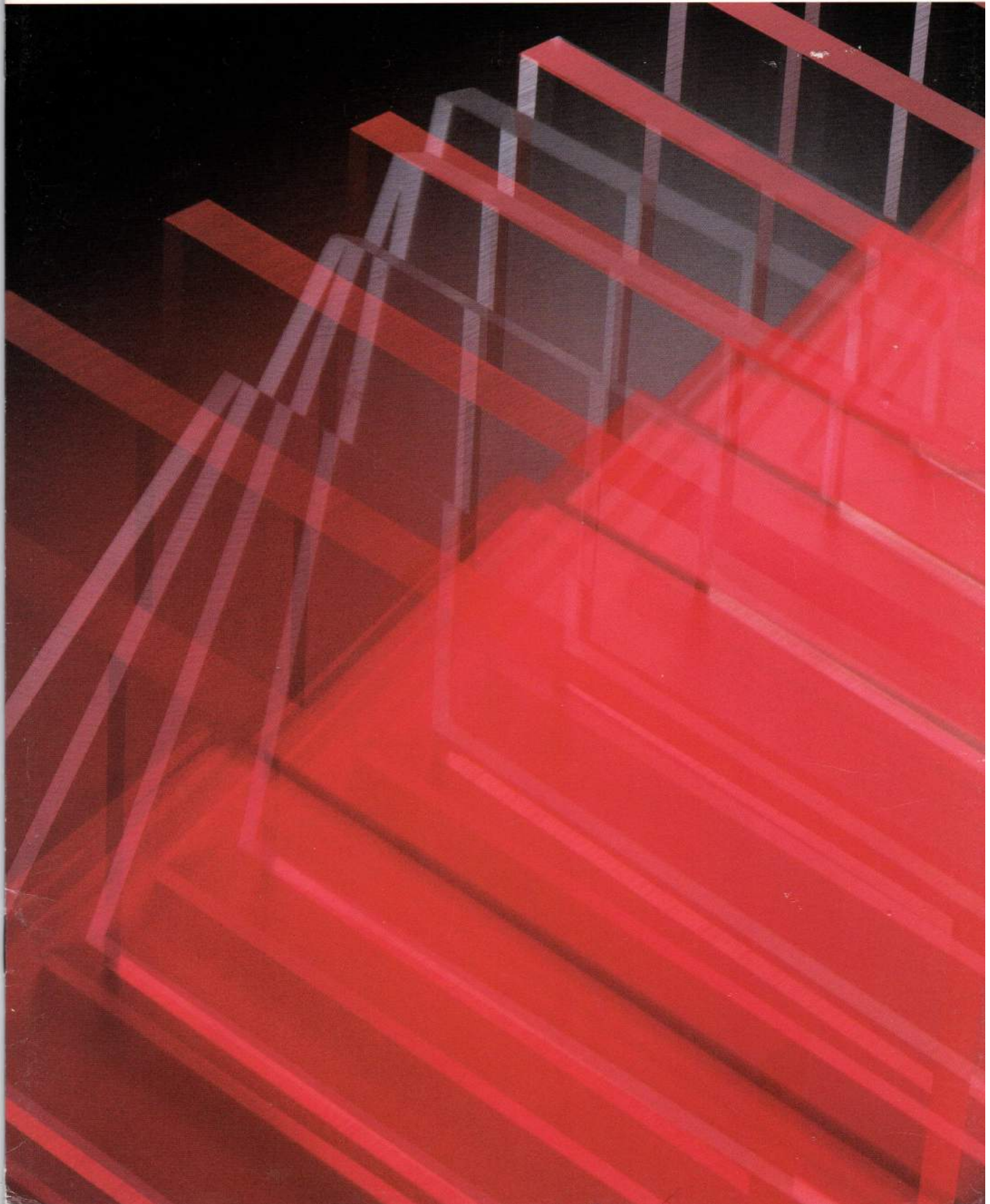
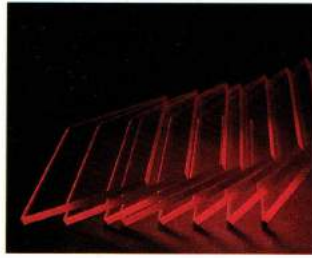


amdaahl

# Large-Scale Processors





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**B**oth the 5890 and the 5990 Series, with their superior performance characteristics and cost advantages, provide our customers with a wider range of choices and solutions than ever before. Moreover, MDF provides a new flexibility option to manage and control processing resources.

These creative responses to customer needs have placed us in a uniquely favorable position to lead the way in today's complex large-scale computer marketplace. Consistent with this barrier-breaking approach, Amdahl introduces new products with real-world solutions for tomorrow's requirements so that our customers can maintain their competitive edge. These solutions are possible because our customers share their future plans with us, and Amdahl continues to respond to these plans with innovative offerings of superior quality, performance, and value.



## Optimal Flexibility: The Multiple Domain Feature

In addition to providing the superior performance and reliability of both the 5890 and the 5990 Series, Amdahl has taken steps to address other kinds of user needs. The management and control of processing resources have become increasingly pressing problems for complex data centers with disparate demands. To reduce these problems, Amdahl has pioneered a bold solution: the Multiple Domain Feature (MDF), which allows customers to run multiple operating systems simultaneously in separate domains on the same processor. With MDF, the operator can easily allocate and adjust processing resources. Data security is inherent in the design, and performance is close to native mode.

Besides offering maximum flexibility and efficiency, MDF is economical. MDF requires no investment in new processors, no additional operating system overhead or licensing fees, and minimal operator training. With MDF, a data center can:

- Test and implement applications and systems while continuing to run production workloads. MDF may even enhance performance: Studies show increased throughput rates for some operating systems running in the multiple-domain environment.
- Consolidate different processing requirements into one large processor to take advantage of economies of scale.
- Convert from one operating system to another while fulfilling production requirements.
- Implement backup strategies for hot standby capabilities to support critical applications.
- Tailor resources to performance requirements.

**A large data center today might have a production machine for the heavy, cyclical workload, a test machine for applications and systems development, and a need to implement an information center to support an expanding number of workstations. With MDF, these customers can consolidate a mixture of operating systems (MVS and VM or UTS and MVS, for example), as well as a mixture of system architectures (370 and 370-XA). Each operating system image is discrete. New applications and systems development proceed without interfering with the production or information center environments. Furthermore, the balance of resources can be changed: A greater proportion of processor time can be given to any one of the domains as needed. If a domain uses less than its allocation, the other domains receive the surplus.**



*Amdahl 5990-700 Dual Processor*



## Vanguard Computing: The 5990

Amdahl's new 5990 Series represents another step forward in our commitment to high-performance, large-systems computing. Offering a nearly fourteenfold increase in performance over the entry-level 580 processor, the 5840, the 5990-1400 four-way Multiprocessor breaks the performance barrier to achieve unprecedented throughput rates in both commercial and scientific environments. Featuring premier component technology and advanced design, the 5990:

- Pioneers a CPU on a board—a new level of circuit integration to provide faster performance by limiting instruction path lengths.
  - Provides a 10-nanosecond cycle time, the industry's fastest.
  - Offers advanced packaging, including an efficient air and self-contained water-cooling combination.
  - Combines high-speed random access memory (RAM) and extremely dense, very large-scale integrated (VLSI) logic to reduce off-chip delay.
- In addition, the 5990 continues Amdahl's commitment to flexibility, reliability, and compatibility. The 5990:
- Can be segmented into seven domains on the 5990-1400 four-way Multiprocessor and four domains on the 5990-700 Dual Processor by using MDF.
  - Offers field upgradeability within the 5990 Series.
  - Affords inherent reliability by virtue of its high-density packaging, extensive logging, and advanced error-checking and correction facilities. One example is patrol circuitry, which scans main storage, expanded storage, and selected control storage, detecting and repairing single-bit errors.
  - Conforms to industry-standard architectures and interfaces, with the flexibility to accommodate those of the future.

**Many customers today find themselves anticipating exponential increases in transaction rates. As a consequence, faster processing speeds become imperative. The greater performance of the Amdahl 5990 allows these customers to process more transactions within current time frames to meet their service objectives.**



*Amdahl 5890-300E Dual Processor*



## Proven Excellence: The 5890

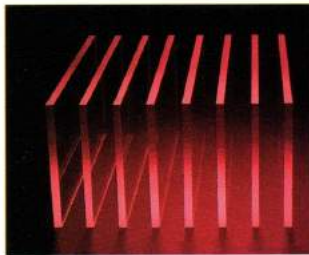
Amdahl continues its commitment to meeting the challenges of our customers' computing needs with the 5890 Series. These models answer the requirements for better, faster, more productive, more reliable, and less expensive delivery of computing resources. In addition to maintaining compatibility and satisfying customer requirements, the 5890 models exemplify Amdahl's traditional barrier-breaking approach in the large-scale computer marketplace. All the 5890 processors use advanced components and innovative design features. Superior price/performance is one result. For example, we offer models with performance equal to that of the competition's processors for less cost, as well as models with greater performance for equal cost. Also our range of performance is exceptionally broad—the top-of-the-line 5890-600E four-way Multiprocessor offers ten times the throughput of the entry-level 580 Series processor, the 5840. And users who anticipate growth can start with a smaller processor and move up to more computer as they need to, making use of another option Amdahl pioneered, field upgradeability.

Advanced componentry and innovative design also apply to keeping a system up and running with a minimum of maintenance. To achieve this continuation of system operation, Amdahl has designed an array of reliability features into the processor itself.

With a solid design, proven high-quality components, and extensive testing, the 5890 Series illustrates Amdahl's enviable track record for system availability.

Many customers today are looking for a new processor to replace or augment their currently installed equipment. Their choice must be economical and yet provide the performance they need to serve their organizations. The 5890 is an appropriate selection for these customers. Its price is competitive, its price/performance has proven superior, and its compatibility means that existing hardware and software can remain in place. The 5890 provides unequaled value for the large-scale computer user.

Transaction processing is the lifeblood of many organizations. Computers that supply information to airline reservation systems, credit card verification systems, government data bases, and similar services must be up for the service to deliver its data to outside users. Other organizations also demand immediate, reliable access to data from computers in their own internal data centers. The reliability and availability aspects of the 5890 Series are an economic advantage: Fewer interruptions in service mean higher productivity, greater effectiveness, and thus happier users.



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Amdahl's evolution from a far-sighted group of innovative engineers to an information systems leader has meant breaking a number of technical and economic barriers. The first barrier fell when Amdahl originated a System/370-compatible processor to operate within the customer's existing environment. Our processor offered customers a viable choice, for up until that time the large-scale computer market had been dominated by the products of a single company. When we introduced our first processor, we introduced competition as well.

This competitive environment ultimately benefited customers by delivering more performance for lower cost. Since 1975, when Amdahl entered the marketplace, the industry has enjoyed a tenfold improvement in price/performance.

Other benefits accrued to the customer as well. In the beginning, Amdahl's concept of compatibility reflected our sensitivity to protecting customers' investments in software and people. This attention to customers' needs provided

our direction and drove our innovations. Our innovations affected another facet of competition, accelerating the implementation of new technologies throughout the industry. Since then, we have strengthened our unique relationship with our customers, working with them to create the innovative products they need to succeed.



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